CLAIMS

1. Optical pickup apparatus comprising a photodetector (302) which comprises a first segment (A) and a second segment (B), and an optical element (301) intended to receive an incident light beam, said optical element (301) comprising :

- a first portion (L) comprising diffraction means for generating a first 0th diffraction order light beam (A(0)) on said first segment (A), and a first non-0th diffraction order light beam (B(+1)) on said second segment (B),
- a second portion (R) comprising diffraction means for generating a second 0th diffraction order light beam (B(0)) on said second segment (B), and a second non-0th diffraction order light beam (A(+1)) on said first segment (A).

2. Optical pickup apparatus as claimed in claim 1, wherein :

- said photodetector (302) comprises a first side segment (C) and a second side segment (D),
- said first portion (L) comprises diffraction means for generating a third non-0th diffraction order light beam (C(-1)) on said first side segment (C),
- said second portion (R) comprises diffraction means for generating a fourth non-0th diffraction order light beam (D(-1)) on said second side segment (D).

3. Optical pickup apparatus as claimed in claim 1, wherein said first portion (L) and said second portion (R) have saw tooth grating structures with mutually opposed angles.

4. Optical pickup apparatus as claimed in claim 1 or 2, wherein said first portion (L) and said second portion (R) have a binary grating structure.

5. Optical pickup apparatus as claimed in one of the claims 1 to 4, wherein :

- said first segment (A) comprises a first sub-segment (A1) and a second sub-segment (A2),

- said second segment (B) comprises a third sub-segment (B1) and a fourth sub-segment (B2).

6. Optical pickup apparatus as claimed in one of the claims 1 to 5, wherein said optical element (301) comprises a third portion (M) arranged between said first portion (L) and said second portion (R).

7. Optical pickup apparatus as claimed in claim 6, wherein said third portion (M) has a rectangular shape with a width 2*s, where s complies with $0.05*r < s < 0.95*r$, r being the radius of said incident light beam.